



Missouri Department of Natural Resources

PUBLIC NOTICE

APPLICATION FOR MISSOURI STATE OPERATING PERMIT

DATE: August 11, 2006

In accordance with the state Clean Water Law, Chapter 644, RSMo, Clean Water Commission regulation 10 CSR 20-6.010, and the federal Clean Water Act, the applicants listed herein have applied for authorization to either discharge to waters of the state or to operate a no-discharge wastewater treatment facility. The proposed permits for these operations are consistent with applicable water quality standards, effluent standards and/or treatment requirements or suitable timetables to meet these requirements (see 10 CSR 20-7.015 and 7.031). All permits will be issued for a period of five years, unless noted otherwise in the Public Notice for that discharge.

On the basis of preliminary staff review and the application of applicable standards and regulations, the Missouri Department of Natural Resources (MDNR), as administrative agent for the Missouri Clean Water Commission, proposes to issue a permit(s) subject to certain effluent limitations, schedules, and special conditions. The proposed determinations are tentative pending public comment.

Persons wishing to comment on the proposed effluent limitations and/or determinations are invited to submit them in writing to the Department of Natural Resources, Northeast Regional Office, 1709 Prospect Drive, Macon, MO 63552, ATTN: G. Irene Crawford, Regional Director. Please include the permit number in all comment letters.

Comments should be confined to the issues relating to the proposed action and permit(s) and the effect on water quality. The MDNR may not consider as relevant comments or objections to a permit based on issues outside the authority of the Clean Water Commission, (see Curd v. Mo. Clean Water Commission, 586 S.W.2d 58 Mo. App. 1979).

All comments must be postmarked by September 11, 2006 or received in our office by 5:00 p.m. on September 14, 2006. The requirement of a signed document makes it impossible to accept email comments for consideration at this time. Comments will be considered in the formulation of all final determinations regarding the applications. If response to this notice indicates significant public interest, a public meeting or hearing may be held after due notice for the purpose of receiving public comment on the proposed permit or determination. Public hearings and/or issuance of the permit will be conducted or processed according to 10 CSR 20-6.020.

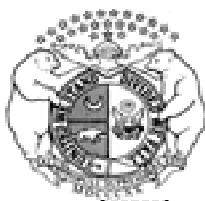
Copies of all draft permits and other information including copies of applicable regulations are available for inspection and copying at DNR's website, <http://www.dnr.mo.gov/env/wpp/index.html>, or at the Department of Natural Resources, Northeast Regional Office, 1709 Prospect Drive, Macon, Missouri 63552.

Public Notice Date: August 11, 2006
Permit Number: MO-0132861
Northeast Regional Office

FACILITY NAME AND ADDRESS	NAME AND ADDRESS OF OWNER
Clear Creek WWTF 8870 Highway W Hannibal, MO 63401	Clear Creek Homeowners Association 5551 Walnut Ridge Hannibal, MO 63401
RECEIVING STREAM & LEGAL DESCRIPTION	TYPE OF DISCHARGE
Unnamed Tributary to Clear Creek Clear Creek (00007) Sec. 14, T57N, R5W, Marion County	Domestic, new

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION



MISSOURI STATE OPERATING PERMIT

In compliance with the Missouri Clean Water Law, (Chapter 644 R.S. Mo. as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended,

Permit No.

MO-0132861

Owner:

Clear Creek Homeowners Association

Address:

5551 Walnut Ridge, Hannibal, MO 63401

Continuing Authority:

Same as above

Address:

Same as above

Facility Name:

Clear Creek WWTF

Facility Address:

8870 Highway W, Hannibal, MO 63401

Legal Description:

NW ¼, SE ¼, NW ¼, Sec. 14, T57N, R5W, Marion County

Latitude/Longitude:

+3944228/-09125427

Receiving Stream:

Unnamed tributary to Clear Creek (U)

First Classified Stream and ID:

Clear Creek (C) (00007)

USGS Basin & Sub-watershed No.:

(07110004-030002)

is authorized to discharge from the facility described herein, in accordance with the effluent limitations and monitoring requirements as set forth herein:

FACILITY DESCRIPTION

Outfall #001 - Subdivision - SIC #4952

STEP/recirculating sand filter/ultra-violet disinfection/sludge hauled by contract hauler

Design population equivalent is 746.

Design flow is 44,970 gallons per day.

Design sludge production is 18.9 dry tons/year.

This permit authorizes only wastewater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Section 644.051.6 of the Law.

A handwritten signature in black ink, reading "Doyle Childers".

Effective Date

Doyle Childers, Director, Department of Natural Resources
Executive Secretary, Clean Water Commission

Expiration Date
MO 780-0041 (10-93)

G. Irene Crawford, Director, Northeast Regional Office

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS				PAGE NUMBER 2 of 3		
				PERMIT NUMBER MO-0132861		
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective on the date of issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Outfall #001</u>						
Flow	MGD	*		*	once/day	24 hr. estimate
Biochemical Oxygen Demand ₅	mg/L		45	30	once/month	24 hr. composite
Total Suspended Solids	mg/L		45	30	once/month	24 hr. composite
pH – Units	SU	**		**	once/ month	grab
Fecal Coliform (Note 1)	#/100 mL	1000		400	once/ month	grab
Ammonia as N (May 1 – Oct 31)	mg/L	3.7		1.9	once/ month	grab
Ammonia as N (Nov 1 – Apr 30)	mg/L	7.5		3.7	once/ month	grab
Temperature	°C	*		*	once/ month	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>MONTHLY</u> ; THE FIRST REPORT IS DUE _____. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
B. STANDARD CONDITIONS						
IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED <u>Parts I & III</u> STANDARD CONDITIONS DATED <u>October 1, 1980 and August 15, 1994</u> , AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.						

MO 780-0010 (8/91)

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

- * Monitoring requirement only.
 ** pH is measured in pH units and is not to be averaged. The pH is limited to the range of 6.0-9.0 pH units.

Note 1: Final limitations and monitoring requirements for Fecal Coliform are applicable only during the recreational season from April 1 through October 31.

C. SPECIAL CONDITIONS

- This permit may be reopened and modified, or alternatively revoked and reissued, to:
 - Comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a) (2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:
 - contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
 - controls any pollutant not limited in the permit.
 - Incorporate new or modified effluent limitations or other conditions, if the result of a waste load allocation study, toxicity test or other information indicates changes are necessary to assure compliance with Missouri's Water Quality Standards.
 - Incorporate new or modified effluent limitations or other conditions if, as the result of a watershed analysis, a Total Maximum Daily Load (TMDL) limitation is developed for the receiving waters which are currently included in Missouri's list of waters of the state not fully achieving the state's water quality standards, also called the 303(d) list.

The permit as modified or reissued under this paragraph shall also contain any other requirements of the Clean Water Act then applicable.
- All outfalls must be clearly marked in the field.
- Permittee will cease discharge by connection to area-wide wastewater treatment system within 90 days of notice of its availability.

C. SPECIAL CONDITIONS (continued)

4. Changes in Discharges of Toxic Substances

The permittee shall notify the Director as soon as it knows or has reason to believe:

- (a) That any activity has occurred or will occur which would result in the discharge of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:"
 - (1) One hundred micrograms per liter (100 µg/L);
 - (2) Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,5 dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
 - (3) Five (5) times the maximum concentration value reported for the pollutant in the permit application;
 - (4) The level established in Part A of the permit by the Director.
- (b) That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant, which was not reported in the permit application.

5. Report as no-discharge when a discharge does not occur during the report period.

6. Water Quality Standards

- (a) Discharges to waters of the state shall not cause a violation of water quality standards rule under 10 CSR 20-7.031, including both specific and general criteria.
- (b) General Criteria. The following general water quality criteria shall be applicable to all waters of the state at all times including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:
 - (1) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses;
 - (2) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;
 - (3) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;
 - (4) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life;
 - (5) There shall be no significant human health hazard from incidental contact with the water;
 - (6) There shall be no acute toxicity to livestock or wildlife watering;
 - (7) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community;
 - (8) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247.

7. Sludge and Biosolids Use For Domestic Wastewater Treatment Facilities

- (a) Permittee shall comply with the pollutant limitations, monitoring, reporting, and other requirements in accordance with the attached permit Standard Conditions.
- (b) If sludge is not removed by a contract hauler, Permittee is authorized to land apply biosolids that are removed from the domestic wastewater treatment facility. Permit Standard Conditions, Part III shall apply to the land application of biosolids. Permittee shall notify the department at least 180 days prior to the planned removal of biosolids. The department may require submittal of a biosolids management plan for department review and approval as determined appropriate on a case-by-case basis.

Date of Fact Sheet: July 5, 2006

Date of Public Notice: August 11, 2006

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT
FACT SHEET

This Fact Sheet explains the applicable regulations, rationale for development of this permit and the public participation process.

NPDES PERMIT NUMBER: MO-0132861

FACILITY NAME: Clear Creek WWTF

OWNER NAME: Clear Creek Homeowners Association

LOCATION: Sec. 14 T57N R5W County: Marion

RECEIVING STREAM: Unnamed tributary to Clear Creek (C) (00007)

FACILITY CONTACT PERSON: Mr. Jon Rogers, Ralls Co PWSD No. 1 TELEPHONE: (573) 221-6615

FACILITY DESCRIPTION

This facility is designed to serve 11 commercial units, 84 Condominiums, and 88 residential units. The design flow rate is 0.04497 million gallons per day. The treatment works consists of septic tank effluent pumps to a recirculating sand filter. Ultra-violet light will be used for disinfection.

The Federal Water Pollution Control Act ("Clean Water Act" Section 402 Public Law 92-500 as amended) established the National Pollutant Discharge Elimination System (NPDES) permit program. This program regulates the discharge of pollutants from point sources into the waters of the United States, and the release of storm water from certain point sources. All such discharges are unlawful without a permit (Section 301 of the "Clean Water Act"). After a permit is obtained, a discharge not in compliance with all permit terms and conditions is unlawful. Permits in Missouri are issued by the Director of the Department of Natural Resources under an approved program, operating in accordance with federal and state laws (Federal "Clean Water Act" and "Missouri Clean Water Law" Section 644 as amended).

10 CSR 20-7.031 Missouri Water Quality Standards, Missouri Department of Natural Resources (the Department) "defines the Clean Water Commission water quality objectives in terms of water uses to be maintained and the criteria to protect those uses." The receiving stream's beneficial water uses to be maintained are livestock and wildlife watering, protection of aquatic life, and whole body contact recreation (level "B").

To protect these beneficial uses and the water quality of the receiving stream, effluent limitations are being established under federal and state laws.

EFFLUENT LIMIT DERIVATION & RATIONALE

Permit limits have been based on the development of a Water Quality Review Sheet (WQRS).

This facility is discharging within two (2) miles of a stream classified as whole body contact recreation. Limits for fecal coliform have been added pursuant to Missouri Code of State Regulations 10 CSR 20-7.015(8)(B)4.A. and 10 CSR 20-7.015(9)(H).

Early life stages present total ammonia nitrogen criteria apply (10 CSR 20-7.031(4)(B)7.C. & Table B3).

This permit will be issued for a period of five (5) years.



Missouri Department of Natural Resources
Water Protection Program
Water Pollution Control Branch
NPDES PERMITS AND ENGINEERING SECTION

Water Quality Review Sheet
Determination of Effluent Limits

FACILITY NAME: Clear Creek Subdivision NPDES #: NEW

FACILITY TYPE/DESCRIPTION: 48,100 gpd wastewater treatment facility

EDU: Plains/MS Tribs btwn Des Moines & MO Rivers 8-DIGIT HUC: 07110004 COUNTY: Marion

LEGAL DESCRIPTION: SW SE NW, Sec 14, T57N, R5W LATITUDE/LONGITUDE: +3944160/-09125441

WATER QUALITY HISTORY: None, new facility.

Outfall Characteristics

OUTFALL	DESIGN FLOW (CFS)	TREATMENT TYPE	RECEIVING WATERBODY	OTHER
001	0.075	Secondary Treatment	Tributary to Clear Creek	

Receiving Waterbody Information

WATERBODY	CLASS	WBID	7Q10 (CFS)	1Q10 (CFS)	30Q10 (CFS)	*DESIGNATED USES
Trib. to Clear Cr.	U	---	0.0	0.0	0.0	General Criteria
Clear Cr.	C	0007	0.0	0.0	0.1	LWW, AQL

*Cool Water Fishery (CLF), Cold Water Fishery (CDF), Irrigation (IRR), Industrial (IND), Boating & Canoeing (BTG), Drinking Water Supply (DWS), Whole Body Contact Recreation (WBC), Protection of Warm water Aquatic Life and Human Health (AQL), Livestock & Wildlife Watering (LWW)

COMMENTS: The discharge is about 1.2 miles from the classified section of Clear Cr.

MIXING CONSIDERATIONS

Mixing Zone (MZ): Not allowed, 7Q10 less than 0.1 cfs [10 CSR 20-7.031(4)(A)4.B.(I)(a)]. Acute criteria apply per 10 CSR 20-7.031(3)(I)1. and chronic criteria must be met at the classified segment of Clear Creek.

Zone of Initial Dilution (ZID): Not allowed [10 CSR 20-7.031(4)(A)4.B.(I)(b)]. Acute criteria must be met end-of-pipe.

Permit Limits and Information

TMDL
WATERSHED: (Y
OR N)

W.L.A. STUDY
CONDUCTED: (Y OR N)

DISINFECTION
REQUIRED: (Y OR N)

USE ATTAINABILITY
ANALYSIS: (Y OR N)

OUTFALL #001

WET TEST (Y OR
N):

A.E.C. LIMIT: _____
FREQUENCY: _____

PARAMETER	DAILY MAXIMUM MONITOR	WEEKLY AVERAGE	MONTHLY AVERAGE	MONITORING FREQUENCY
FLOW				once/day
BOD ₅ (MG/L)		45	30	once/month
TSS (MG/L)		45	30	once/month
PH (S.U.)	6-9		6-9	once/month
AMMONIA AS N (MG/L) (MAY 1 – OCT 31)	3.7		1.9	once/month
AMMONIA AS N (MG/L) (NOV 1 – APR 30)	7.5		3.7	once/month
FECAL COLIFORM (COLONIES/100 mL)	1000		400	once/month
TOTAL RESIDUAL CHLORINE (MG/L)	0.019		0.010	once/month

Please report the date, time, and location for each parameter sampled along with the average daily flow (actual flow measured or estimated, not design flow). All the parameters should be sampled on the same day and within no more than a 2-hour period. Dissolved oxygen (DO) measurements are to be taken during the period from one hour prior to sunrise to one and one-half hour after sunrise. If discharge is contingent to storm events, rainfall should be measured every time there is a discharge.

Receiving Water Monitoring Requirements

No receiving water monitoring requirements recommended at this time.

Derivation and Discussion of Limits

Wasteload allocations are calculated using water quality criteria and the dilution equation below:

$$C = \frac{(C_s * Q_s) + (C_e * Q_e)}{(Q_e + Q_s)} \quad (\text{EPA/505/2-90-001, Section 4.5.5})$$

Where C = downstream concentration
C_s = upstream concentration
Q_s = upstream flow (cfs)
C_e = effluent concentration
Q_e = effluent flow (cfs)

Chronic wasteload allocations are determined using applicable chronic water quality criteria (CCC: criteria continuous concentration) and stream volume of flow at the edge of the mixing zone (MZ). Acute wasteload allocations are determined using applicable acute water quality criteria (CMC: criteria maximum concentration) and stream volume of flow at the edge of the zone of initial dilution (ZID).

Water quality based maximum daily and average monthly effluent limitations are calculated using methods and procedures outlined in USEPA's "Technical Support Document For Water Quality-based Toxics Control" [EPA/505/2-90-001, also known as "TSD"] and "1999 Update of Ambient Water Quality Criteria for Ammonia" [64 FR 71974, December 22, 1999].

- **Biochemical Oxygen Demand (BOD₅)**. 30 mg/L monthly average, 45 mg/L weekly average [10 CSR 20-7.015(8)(B)1.]
- **Total Suspended Solids (TSS)**. 30 mg/L monthly average, 45 mg/L weekly average [10 CSR 20-7.015(8)(B)1.]
- **pH**. pH shall be maintained in the range from six to nine (6 – 9) standard units [10 CSR 20-7.015(8)(B)2.]
- **Total Ammonia Nitrogen**. Early Life Stages Present Total Ammonia Nitrogen criteria apply [10 CSR 20-7.031(4)(B)7.C. & Table B3]; background total ammonia nitrogen = 0.01 mg/L.

Season	Temp (°C)	pH (SU)	Total Ammonia Nitrogen CCC (mg/L)	Total Ammonia Nitrogen CMC (mg/L)
Summer	26	7.8	1.5	12.1
Winter	6	7.8	3.1	12.1

Summer: May 1 – October 31, Winter: November 1 – April 30

	Flow (cfs)	MZ (cfs)	ZID (cfs)
7Q10	0.0	0.0	0.0
1Q10	0.0	0.0	0.0
30Q10	0.1	0.025	N/A

Applicable mixing zone regulation: 10 CSR 20-7.031(4)(A)4.B.(I)

Summer (CCC = 1.5 mg/L, CMC = 12.1 mg/L)

Chronic WLA: $C_e = ((0.075 + 0.0)1.5 - (0.0 * 0.01))/0.075$
 $C_e = 1.5 \text{ mg/L}$

Acute WLA: $C_e = ((0.075 + 0.0)12.1 - (0.0 * 0.01))/0.075$
 $C_e = 12.1 \text{ mg/L}$

$LTA_c = 1.5 \text{ mg/L} (0.780) = 1.2 \text{ mg/L}$

[CV = 0.6, 99th Percentile, n = 30]

$LTA_a = 12.1 \text{ mg/L} (0.321) = 3.9 \text{ mg/L}$

[CV = 0.6, 99th Percentile]

Use most protective number of LTA_c and LTA_a (LTA_{MIN})

$MDL = 1.2 \text{ mg/L} (3.11) = 3.7 \text{ mg/L}$

[CV = 0.6, 99th Percentile]

$AML = 1.2 \text{ mg/L} (1.55) = 1.9 \text{ mg/L}$

[CV = 0.6, 95th Percentile, n = 4]

Winter (CCC = 3.1 mg/L, CMC = 12.1 mg/L)

Chronic WLA: $C_e = ((0.075 + 0.0)3.1 - (0.0 * 0.01))/0.075$
 $C_e = 3.1 \text{ mg/L}$

Acute WLA: $C_e = ((0.075 + 0.0)12.1 - (0.0 * 0.01))/0.075$
 $C_e = 12.1 \text{ mg/L}$

$LTA_c = 3.1 \text{ mg/L} (0.780) = 2.4 \text{ mg/L}$

[CV = 0.6, 99th Percentile, n = 30]

$LTA_a = 12.1 \text{ mg/L} (0.321) = 3.9 \text{ mg/L}$

[CV = 0.6, 99th Percentile]

Use most protective number of LTA_c and LTA_a (LTA_{MIN})

$$MDL = 2.4 \text{ mg/L } (3.11) = 7.5 \text{ mg/L}$$

$$[CV = 0.6, 99^{\text{th}} \text{ Percentile}]$$

$$AML = 2.4 \text{ mg/L } (1.55) = 3.7 \text{ mg/L}$$

$$[CV = 0.6, 95^{\text{th}} \text{ Percentile, } n = 4]$$

Season	Maximum Daily Limit (mg/L)	Average Monthly Limit (mg/L)
Summer	3.7	1.9
Winter	7.5	3.7

- **Fecal Coliform.** Discharge shall not contain more than a monthly geometric mean of 400 colonies/ 100 mL and a daily maximum of 1000 colonies/100 mL during the recreational season (April 1 – October 31) [10 CSR 20-7.015(8)(B)4.A.] Future renewals of the facility operating permit will contain effluent limitations for E. coli which will replace fecal coliform as the applicable bacteria criteria in Missouri's water quality standards.
- **Total Residual Chlorine (TRC).** TRC limits apply only if chlorine is used at this facility.

$$\text{Total Residual Chlorine CCC} = 10 \text{ g/l}$$

$$\text{Total Residual Chlorine CMC} = 19 \text{ g/l}$$

$$\text{Background TRC} = 0 \text{ g/l}$$

$$WLA_{(CMC, ZID)} = ((0.075 + 0.0) * 19 - (0.0 * 0.00))/0.075 = 19 \text{ g/l}$$

$$LTA_a = 19 * 0.321 = 6.1 \text{ g/l} \quad (CV = 0.6, 99^{\text{th}} \text{ percentile})$$

$$MDL = 6.1 * 3.11 = 19 \text{ g/l} \quad (CV = 0.6, 99^{\text{th}} \text{ percentile})$$

$$AML = 6.1 * 1.55 = 9.5 \text{ g/l} \quad (CV = 0.6, 95^{\text{th}} \text{ percentile, } n = 4)$$

Total Residual Chlorine effluent limits of 0.019 mg/L daily maximum, 0.010 mg/L monthly average are recommended if chlorine is used as a disinfectant. Standard compliance language for TRC, including the minimum level (ML), should be included in the permit.

Reviewer: Keenan Patterson

Date: April 28, 2006

Unit Chief: Refaat Mefrakis

Monitoring and effluent limits contained within this document have been developed in accordance with EPA guidelines using the best available data and are believed to be consistent with Missouri's Water Quality Standards and Effluent Regulations. If additional water quality data are available that may affect the recommended monitoring